LOCKHEED AIRCRAFT CORP.	ENGINEERING STUDY [X] CHANGE PROPOSAL [ ]	LAC -160
DATE 5 NOVEMBER 1963	AFFECTS: WSPO [X]	PROJECT [X]

NAME OF MAJOR COMPONENT	PART OR LOWEST SUBASSEMBLY	PART NO. & MODEL OR TYPE

TITLE OF PROPOSAL: IMPROVED NAVIGATION CAPABILITY - FLIGHT TEST EVALUATION

NATURE OF PROPOSAL:

SEE PAGE 2

REASON FOR PROPOSAL:

SEE PAGE 2

ES — ESTIMATED COST AND TIME INVOLVED:

ADDITIONAL FUNDING REQUIRED:

CP — ESTIMATED COST FOR KITS OR PARTS: SEE PAGE 4

ADDITIONAL FUNDING REQUIRED: NONE (SP-1923)

ITEMS AFFECTED BY PROPOSAL:

SAFETY	MISSION EFFECTIVENESS	PERFORMANCE	OPERATING PROCEDURE	INTERCHANGEABILITY	WEIGHT OR WEIGHT & BALANCE	TOOLS & SUPPORT EQUIPMENT	MAINTENANCE PROCEDURE	SERVICE LIFE	FLIGHT MANUAL	MAINTENANCE MANUAL
[ ]	[X]	[X]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]	[ ]

EST. MAN/HRS. REQ'D. TO ACCOMPLISH CHANGE IN FIELD

SOURCE OF PARTS FOR KIT	AVAILABILITY ___ - ___ WEEKS AFTER APPROVAL
LAC	SEE LAC-161 PART B
DISPOSITION OF SPARES AFFECTED: N/A	Concur OD/OSA 15 NOV 63 STAT
INITIATED BY: CUSTOMER	APPROVED: WSPO PROJECT 15 NOV 63

PURPOSE:

To evaluate the AN/ASN-39 Automatic Dead Reckoning Navigation Computer System in the aircraft.

NATURE:

In conjunction with part B of ECP-161 (Flight Control System Evaluation), the AN/ASN-39 System will be installed using the Bendix compass system and obtaining true air speed from the Minneapolis Honeywell Air Data Computer.

The AN/ASN-39 system continually computes and/or displays, on the computer control and course indicator, the following information during flight:

Computer Control	1. Latitude and longitude of aircraft present position.
	2. Latitude and longitude of target or destination.
	3. Magnetic variation (inserted).
	4. Wind direction and velocity (inserted).
Bearing Distance Heading Indicator	5. Earth great circle distance from aircraft present position to selected target, destination or base.
	6. Earth great circle bearing (course angle) to present target, destination or base.

The course indicator selected for use with ECP LAC-161 will be compatible with this system.

Wind direction, wind velocity, and magnetic variation are manually inserted on the Computer Control. The mode selector on the Computer Control permits storing two fixed latitude and longitude coordinates, normally, the target position and the base or starting position, but new coordinates may be added by employing a "leap frog" technique in setting each additional set of coordinates by switching into the "STANDBY" mode. This also permits updating present position periodically from visual fixes or from celestial fixes.

This system is dependent on availability of a true air speed input which can be supplied by the ADC unit in part B of ECP LAC-161, but is not available from part A. If LAC-161 part A is subsequently selected, a new source for True Air Speed must be developed. If the L.S.I. Auto Pilot with ASN-39 Nav. System is the desired configuration, a new source of true air speed should be available prior to production installation.

Upon successful completion of evaluation tests, a separate ECP for incorporation of the system will be issued.

ESTIMATED COST FOR KITS OR PARTS (SP-1923)

1.	Fab. Assem. and Install*	$8,500

*Engineering and Flight Test Support to be accomplished with Part B of ECP LAC-161 M-H Prototype Autopilot.

Note: Bendix AN/ASN-39 Navigation System on loan at no charge (Incl. Flight Test Support.